I. Listing of Claims

1. (Currently amended): A variable rate multi-arc leaf spring assembly comprising:

a main leaf spring constructed of a composite material, said main leaf spring having an upper surface defining [[an]] a continuously upwardly curved central arc portion having a first radius and at least one pair of upwardly curved peripheral arc portions extending from said central arc portion and having radii not equal to said first radius,

wherein said main leaf spring [[providing]] provides a continuous variable spring deformation rate including a soft spring rate and a hard spring rate.

2. (Original): The variable rate multi-arc leaf spring assembly of claim 1 wherein said composite material consists of a fiber-reinforced resin.

3. (Original): The variable rate multi-arc leaf spring assembly of claim 1 wherein said main leaf spring defines a uniform cross-sectional area throughout its length.

4. (Previously presented): The variable rate multi-arc leaf spring assembly of claim 1 wherein said main leaf spring further includes at least one integral mounting end connected with at least one upwardly curved peripheral arc portion of said at least one pair of upwardly curved peripheral arc portions, said at least one integral mounting end adapted to be connected to a loading structure.

5. (Original): The variable rate multi-arc leaf spring assembly of claim 4 wherein said at least one integral mounting end comprises a mounting eyelet.

6. (Previously presented): The variable rate multi-arc leaf spring assembly of claim 5 wherein said mounting eyelet includes an out-of-mold metallic insert for installation.

7. (Currently amended): The variable rate multi-arc leaf spring assembly of claim 1 further comprising a load plate mounted beneath said main leaf spring, wherein said load plate [[gradually]] progressively and continuously engages a lower

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surface of said leaf spring along a contact length during a predetermined set of payload conditions to enhance said soft spring rate, wherein the contact length increases with higher loads.

8. (Previously presented): The variable rate multi-arc leaf spring assembly of claim 7 wherein said load plate is constructed of said composite material.

9. (Original): The variable rate multi-arc leaf spring assembly of claim 7 wherein said load plate defines a uniform cross-sectional area throughout its length.

10. (Currently amended): The variable rate multi-arc leaf spring assembly of claim 7 further comprising an intermediary member spaced between said main leaf spring and said load plate.

11. (Original): The variable rate multi-arc leaf spring assembly of claim 10 wherein said intermediary member is constructed of urethane.

12. (Currently amended): A variable rate multi-arc leaf spring assembly comprising:

a main leaf spring constructed of a composite material, said main leaf spring having an upper surface and a lower surface, the upper surface of said main leaf spring defining [[an]] a continuously upwardly curved central arc portion having a first radius and at least one pair of upwardly curved peripheral arc portions extending from said central arc portion and having radii not equal to said first radius, wherein said main leaf spring [[provide]] provides a continuous variable spring deformation rate including a soft spring rate and a hard spring rate; and

a load plate mounted beneath said main leaf spring for direct contact with the lower surface of said main leaf spring along a contact length when an increased load is applied to said main leaf spring, wherein the contact length [[between said main leaf spring and said load plate]] increases when [[said]] a further increased load is applied.

13. (Original): The variable rate multi-arc leaf spring assembly of claim 12 wherein said composite material consists of a fiber-reinforced resin.

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14. (Original): The variable rate multi-arc leaf spring assembly of claim 12 wherein said main leaf spring defines a uniform cross-sectional area throughout its length.

15. (Previously presented): The variable rate multi-arc leaf spring assembly of claim 12 wherein said main leaf spring further includes at least one integral mounting end connected with at least one upwardly curved peripheral arc portion of said at least one pair of upwardly curved peripheral arc portion, said at least one integral mounting end adapted to be connected to a loading structure.

16. (Original): The variable rate multi-arc leaf spring assembly of claim 15 wherein said at least one integral mounting end comprises a mounting eyelet.

17. (Currently amended): The variable rate multi-arc leaf spring assembly of claim 16 wherein said [[a]] mounting eyelet includes an out-of-mold metallic insert for installation.

18. (Previously presented): The variable rate multi-arc leaf spring assembly of claim 12 wherein said load plate is constructed of said composite material.

19. (Original): The variable rate multi-arc leaf spring assembly of claim 12 wherein said load plate defines a uniform cross-sectional area throughout its length.

20. (Currently amended): The variable rate multi-arc leaf spring assembly of claim 12 further comprising an intermediary member spaced between said main leaf spring and said load plate.

21. (Original): The variable rate multi-arc leaf spring assembly of claim 20 wherein said intermediary member is constructed of urethane.

22-30. (Cancelled)

31. (Currently amended): A method of achieving a continuous non-linear variable spring deformation rate for a multi-arc leaf spring assembly comprising:

providing a main leaf spring having an upper surface and a lower surface, the upper surface of the main leaf spring defining a continuously upwardly curved central

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arc portion having a first radius and at least one pair of upwardly curved peripheral arc portions having radii not equal to said first radius;

providing a load plate beneath said main leaf spring;

applying a downward force to said main leaf spring, wherein said central arc portion of said main leaf spring flexes and the lower surface of said main leaf spring directly contacts said load plate along a contact length so that the contact length between said main leaf spring and said load plate increases with higher loads; and

applying an increased downward force to said main leaf spring, wherein the lower surface of said main leaf spring along said central arc portion engages said load plate throughout a length of said load plate and said at least one pair on peripheral arc portions flexes to achieve a hard spring rate with a continuous transition from said soft spring rate to said hard spring rate.

32. (Previously presented): The method of claim 31 wherein said main leaf spring further includes at least one integral mounting end connected with said at least one peripheral arc portion, said at least one mounting end adapted to be connected to a loading structure.

33. (Previously presented): The method of claim 31 further comprising the method of separating said main leaf spring from said load plate under empty payload conditions with an intermediary member.

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